Table of flood stages during June 1938—Continued

River and station	Flood stage	Above flood stages—dates From—	To—	Crest Stage	Date
MISSISSIPPI SYSTEM—continued					
White Basin					
White:	*Feet*			*Feet*	
Georgetown, Ark	21	May 28	8	22.7	1
Clarendon, Ark	26	2	13	27.0	7, 8, 9
Arkansas Basin					
Little Arkansas: Sedgwick, Kans	18	25	26	23.8	25
Cimarron: Perkins, Okla	11	1	1	11.2	1
		11	11	11.0	11
		21	21	11.1	21
Neosho:					
Neosho Rapids, Kans	22	12	13	22.8	12
LeRoy, Kans	23	May 31	1	25.3	1
Iola, Kans	15	May 20	2	20.5	May 24
Oswego Kans	17	May 22	5	23.5	1
		7	9	20.8	9
		16	19	21.8	18
North Canadian: Yukon, Okla	8	May 19	29	12.6	May 22
				11.2	4
				10.1	21
Arkansas:					
Fort Smith, Ark	22	13	13	22.0	13
Van Buren, Ark	22	13	13	22.3	13
Red Basin					
Sulphur:					
Ringo Crossing, Tex	20	8	13	28.0	9
Naples, Tex	22	12	19	25.6	14
WEST GULF OF MEXICO DRAINAGE					
Brazos: Waco, Tex	27	17	17	27.5	17

Table of flood stages during June 1938—Continued

River and station	Flood stage	Above flood stages—dates From—	To—	Crest Stage	Date
GULF OF CALIFORNIA DRAINAGE					
Colorado Basin	*Feet*			*Feet*	
Eagle: Eagle, Colo	5	May 29	10	5.9	6
		13	15	5.2	14
		21	24	5.3	22, 23
Roaring Fork: Carbondale, Colo	5	May 28	(1)	6.2	May 30
				6.7	6
				6.5	13
				6.3	23
Gunnison: Delta, Colo	9	May 27	9	11.2	May 30
				10.8	4, 5
		13	14	9.7	14
		21	24	9.7	22
Colorado: Grand Junction, Colo	11	4	8	11.3	5–7
PACIFIC SLOPE DRAINAGE					
San Joaquin Basin					
Kings: Piedra, Calif	10	May 24	12	13.2	4
San Joaquin: Lathrop, Calif	17	May 29	16	20.4	7, 9
		19	21	17.2	20, 21
Columbia Basin					
Kootenai: Bonners Ferry, Idaho	31	May 29	1	31.5	May 30
Clearwater: Kamiah, Idaho	12	May 25	4	14.6	May 29
		6	6	12.0	6
Willamette: Portland, Oreg	18	May 29	16	20.8	1–2, 9–11
Columbia: Vancouver, Wash	15	May 26	(1)	21.5	10

[1] Continued at end of month.

WEATHER ON THE ATLANTIC AND PACIFIC OCEANS

[The Marine Division, I. R. TANNEHILL in charge]

NORTH ATLANTIC OCEAN, JUNE 1938

By H. C. HUNTER

Atmospheric pressure.—The pressure averaged slightly to moderately higher than normal over nearly all of the North Atlantic, but from the vicinity of the Azores northward and northeastward it was lower than normal. The greatest station departure of the month was 0.14 inch below normal at Reykjavik, Iceland. The first 8 days and the period from the 19th to the end of June were marked by low pressure most of the time from Icelandic waters to the region around the British Isles.

The highest vessel pressure reading yet found is 30.63 inches, during the forenoon of the 10th, noted on the American steamship *Edward L. Doheny*, near latitude 50° north, longitude 23° west. The lowest vessel reading is from the wireless report of an unidentified vessel near the Orkney Islands, just before noon of the 29th, 28.94 inches. However, for the 28th and the latter part of the 27th no vessel reports are at hand from the vicinity of the Orkney and Shetland groups, and table 1 shows a reading lower by more than a quarter of an inch at Lerwick on the 28th.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, June 1938*

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Julianehaab, Greenland	29.77	−0.09	30.06	29	29.32	3
Reykjavik, Iceland	29.74	−.14	30.15	14	29.32	28
Lerwick, Shetland Islands	29.74	−.06	30.18	17	28.67	28
Valencia, Ireland	30.00	.00	30.48	13	29.18	28
Lisbon, Portugal	30.09	+.06	30.27	9	29.86	7
Madeira	30.13	+.06	30.27	9	29.90	24
Horta, Azores	30.23	−.01	30.44	27	30.00	15
Belle Isle, Newfoundland	29.93	+.07	30.34	17	29.40	22
Halifax, Nova Scotia	29.99	+.02	30.32	11	29.74	6, 26
Nantucket	29.99	+.01	30.40	10	29.80	5
Hatteras	30.03	+.02	30.30	10	29.84	22
Bermuda	30.20	+.07	30.34	10, 11	29.84	2
Turks Island	30.05	+.02	30.11	27, 28	29.97	1, 2, 14, 15
Key West	30.03	+.04	30.13	10	29.87	3
New Orleans	30.03	+.05	30.21	12	29.85	2

NOTE.—All data based on a. m. observations only, with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

Cyclones and gales.—June normally is one of the quietest months on the North Atlantic, but this year it was less quiet than usual, and there was marked contrast with the especially placid June of 1937.

As the month opened a storm of considerable strength had developed over the Grand Banks; it advanced for a day or more slowly toward the east-northeastward, then turned more to northward, as high pressure moved in behind it. Several vessels met fresh to strong gales during these early days of June from the vicinity of the Grand Banks eastward to beyond mid-ocean.

The fortnight from the 4th to 17th furnished almost no gale reports. During much of this period pressure was a little higher than normal over the region of Bermuda and to the eastward. Trade winds to the southward and southwestward were somewhat intensified, and two instances were reported from the Caribbean—one near the western end and one near the eastern—of winds attaining force 8.

About the 17th a belt of low pressure became established nearly along the 60th parallel of latitude, extending from the vicinity of Norway to or beyond northern Hudson Bay. Within this belt some LOWS were well marked for a few days, especially one which was near the southern tip of Greenland on the 17th and thereafter moved slowly eastward. From the 18th to the 21st some vessels on northern routes, when near or to northward of the 55th parallel and to eastward of the 35th meridian, noted strong to whole gales; the Belgian motorship *Lubrafol* recorded force 11, the only reported instance of such force this month over Atlantic waters. About the 22d there was a weakening of the low pressure centers over the ocean and no further gales in connection with them are of record.

On the 26th a center of low pressure appeared between Ireland and southern Greenland and gained force rapidly, moving toward the east-northeast. There were four reports of whole or strong gales on the 28th over waters to the southwestward of Ireland.

Just afterward there occurred the only noteworthy June storm activity close to the eastern United States coast. A less energetic LOW than the one that had just passed the British Isles, moved slowly eastward off the middle and north Atlantic coast, but was vigorous enough to cause strong gales southeast of New England on the 30th. This LOW soon turned northward till it was once more over the land.

Fog.—Fog was plentiful from near Delaware Bay northeastward and eastward to the southern part of the Grand Banks area and on to about the 35th meridian. Nearly throughout this stretch the occurrence was greater than usual in June, and in the 5° square, 40° to 45° North, 65° to 70° West, there were no less than 25 days with fog, every day from the 15th to the 29th inclusive furnishing reports. Near the tail of the Grand Banks the square 40° to 45° N., 45° to 50° W. had fog on 19 days. For a moderate distance to southeastward of Nova Scotia and for a greater distance directly to eastward of Newfoundland, including the northern portion of the Grand Banks, fog was somewhat less prevalent than normally in June, and the period from 8th to 19th inclusive embraced a very large part of the fog reports from these regions.

Between the 35th and the 15th meridians, fog was almost completely absent to southward of 45° N., while to northward it was less frequent than usual in June. However, between the 15th and 5th meridians, in the latitude of the Bay of Biscay and the western end of the English Channel fog was noted as more prevalent than usual with nearly all of it during the period from the 14th to the 26th.

OCEAN GALES AND STORMS, JUNE 1938

Vessel	Voyage		Position at time of lowest barometer		Gale began June—	Time of lowest barometer June—	Gale ended June—	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN			° ′	° ′				*Inches*					
Black Hawk, Am. S. S.	Antwerp	New York	44 27 N.	46 10 W.	1	4p, 1	2	29.05	ESE	SW, 7	NNW	NW, 9	SSW-WNW.
American Importer, Am. S. S.	Belfast	Boston	45 20 N.	42 10 W.	1	9p, 1	2	29.10	SE	SW, 9	WNW	SW, 9	SW-WSW.
Pres. Harding, Am. S. S.	Cobh	New York	44 30 N.	41 34 W.	1	10p, 1	2	29.09	SSE	SW, 9	SW	WSW, 9	SSW-NW.
American Banker, Am. S. S.	London	Boston	45 30 N.	36 30 W.	1	11p, 1	2	29.32	S	SW, 9	WSW	SW, 9	SW-W.
City of Hamburg, Am. S. S.	Norfolk	Havre	43 42 N.	39 39 W.	1	Mdt, 1	2	29.44	SW	SW, 9	W	WSW, 9	SW-WSW.
Boschdyk, Du. S. S.	New Orleans	London	[1]43 09 N.	36 03 W.	2	4a, 2	2	29.62	SW	SW, 8	NW	WSW, 8	SW-W.
Winkler, Pan. M. S.	Birkenhead	Philadelphia	48 04 N.	27 27 W.	2	Noon, 2	3	29.32	SW	SSW, 7	WNW	SSW, 8	SSW-WNW.
Spaarndam, Du. S. S.	Rotterdam	New York	47 01 N.	30 34 W.	1	Noon, 2	3	29.39	SW	SW, 8	WNW	SW, 8	S-NW.
Sarcoxie, Am. S. S.	Havre	do	49 00 N.	27 40 W.	2	4p, 2	3	29.33	S	SSW, 7	WNW	NW, 8	SSW-WNW.
Sangstad, Nor. M. S.	Leith	Savannah	57 14 N.	25 55 W.	2	7a, 3	4	[2]29.05	S	SW, 8	SE	W, 8	S-W-SE.
Cefalu, Hond. S. S.	Havana	Cristobal	9 30 N.	80 00 W.	5	7a, 7	6	29.86	E	SE, 3	E	E, 8	NE-SE.
Tynefield, Br. M. S.	Newcastle	Las Piedras	13 16 N.	67 47 W.	13	7a, 14	14	29.91	ESE	ESE, 6	ESE	ESE, 8	SSE-ESE.
Mormacsun, Am. S. S.	Viborg	Philadelphia	54 08 N.	32 08 W.	18	5a, 18	18	29.70	NW	NW, 7	W	NW, 9	WSW-NW.
Svanhild, Dan. S. S.	New York	Copenhagen	55 20 N.	25 15 W.	18	8p, 18	19	[2]29.70	W	W, 9	W	W, 9	
Scanyork, Am. S. S.	Copenhagen	New York	56 30 N.	18 18 W.	20	4p, 20	21	29.42	S	WSW	WNW	WSW, 9	S-WSW.
Lubrafol, Belg. M. S.	Gothenburg	Corpus Christi	[1]58 40 N.	14 42 W.	20	4a, 21	21	29.12	WSW	SW, 10	WNW	WNW, 11	SW-W.
Svanhild, Dan. S. S.	New York	Copenhagen	59 26 N.	8 45 W.	21	10a, 21	22	[2]29.21	SW	SSW, 9	W	SSW, 10	
Chattanooga City, Am. S. S.	Avonmouth	Portland, Maine.	51 30 N.	22 31 W.	27	4a, 28	28	29.14	SSW	WSW, 10	NW	WSW, 10	SW-WNW.
Boston City, Br. S. S.	Swansea	Montreal	52 30 N.	18 20 W.	28	8a, 28	28	29.03	SSW	S, 9	NW	W, 10	S-NW.
Black Eagle, Am. S. S.	Antwerp	New York	49 30 N.	13 00 W.	28	11a, 28	28	29.50	WSW	WSW, 8	WNW	WSW, 9	
Pipestone County, Am. S. S.	Havre	do	49 42 N.	15 30 W.	28	11a, 28	28	29.53	W	W, 8	WNW	WNW, 9	W-WNW.
Collamer, Am. S. S.	Bordeaux	do	40 48 N.	65 10 W.	29	1a, 30	30	29.71	SSW	S, 9	NNW	S, 9	S-NNW.
Padnsay, Am. S. S.	St. Vincent, C. V. I.	Boston	41 14 N.	64 16 W.	29	2a, 30	30	29.69	SSW	SW, 9	NE	SW, 9	S-NW.
NORTH PACIFIC OCEAN													
R. J. Hanna, Am. S. S.	Los Angeles	Balboa	[1]14 38 N.	95 42 W.	2	4a, 2	2	29.81	NE	NE, 7	NE	NE, 8	
Hamakua, Am. S. S.	Hilo	San Francisco	37 18 N.	124 18 W.	2	3p, 2	2	29.96		NW, 5		NNW, 8	
Honolulan, Am. S. S.	San Francisco	Portland, Oreg.	41 42 N.	124 30 W.	3	4a, 3	3	29.95	NNW	NNW, 7	NNW	NNW, 8	
Toorak, Br. S. S.	Shanghai	Los Angeles	36 00 N.	123 48 W.	8	4a, 9	8	29.87		NW, 7		N, 8	N-NW.
Pres. Cleveland, Am. S. S.	Honolulu	San Francisco	37 41 N.	123 00 W.	8	4a, 9	8	29.73	N	NNW, 6	NNW	NNW, 8	
Solana, Am. S. S.	Manila	do	[1]37 52 N.	122 24 W.	8	4a, 10	9	29.84	N	SW, 3	NW	NNW, 8	NW-SW.
Makiki, Am. S. S.	Hilo	do	[1]37 39 N.	122 56 W.	8	8a, 10	10	29.92	NW	NW, 6	NW	N, 8	
Chickasaw City, Am. S. S.	do	Balboa	17 30 N.	125 42 W.	15	5p, 15	15	28.84	NNE	ESE, 5	S	NNE, 11	NNE-ESE-S.
Nako Maru, Jap. M. S.	Yokohama	Los Angeles	46 12 N.	168 48 W.	17	Noon, 17	18	29.48	W	W, 8	WSW	W, 9	W-SW.
Honolulan, Am. S. S.	Los Angeles	Balboa	21 10 N.	107 55 W.	22	7a, 22	22	29.59	E	SE, 8	SSE	SE, 8	ESE-SSE.
Helen Whittier, Am. S. S.	do	do	[1]15 47 N.	98 55 W.	25	12½p, 26	26	29.14	E	Lt. var	SSW	SW, 11	NE-calm-WSW-SW.
Bengalen, Du. M. S.	Manila	Portland, Oreg.	30 00 N.	135 50 E.	29	2a, 29	30	29.36	SSE	SE, 4	SSW	SSW, 10	E-SE.

[1] Position approximate.

[2] Barometer uncorrected.